

REMARKS

Reconsideration of this Application is respectfully requested.

Status of the claims

Upon entry of the foregoing amendments, claims 23-42 are pending in the application, with claims 23 and 33 being the independent claims. Claims 1-22 are canceled without prejudice or disclaimer. Applicant expressly reserves the right to prosecute these claims, or claims based on the subject matter of canceled claims, in other applications.

Claims 23-42 are newly added herein. These claims add no new matter, and are supported by the specification, figures, and claims as filed. Their entry is respectfully requested.

Based on the above amendments and the following remarks, applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Support for Claims

Applicants have canceled the previously pending claims and added claims 23-44 to more particularly claim the invention. The new claims are fully supported by the specification and add no new matter. For example, new independent claims 23 and 33, reciting nucleic acid molecules encoding mutant GFPs having a cysteine residue at position 64, are supported at least at paragraph [0024] of the specification as filed (paragraph [0036] of the published application 20040086968), which provides:

The invention is particularly directed to such nucleic acid molecules encoding mutant GFPs, wherein the amino acid residue at position 64 is alanine, valine, leucine, isoleucine, proline, methionine, glycine, serine, threonine, cysteine, alanine, asparagine, glutamine, aspartic acid, or glutamic acid, most preferably cysteine or methionine.

Further support is provided in the mutants of Table 3, for example, pGreenLantern-2/A2 and pGreenLantern-2/A3.

Dependent claims 24-32, depending from claim 23, are based on canceled claims 1, 2, and 8-14. Dependent claims 34-42, depending from claim 33, are based on canceled claims 15-22. These claims add no new matter and their entry is respectfully requested.

Claims Objections

The Examiner has objected to claims 1 and 15 because of the repetition of the word "alanine" and the use of "aspartate" and "glutamate" rather than "aspartic acid" and "glutamic acid". Applicant has canceled claims 1 and 15, rendering the objections moot. Applicant respectfully requests that the rejection be withdrawn.

Rejections under 35 U.S.C. §112, First Paragraph

Claims 1 and 8-22 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one of skill in the art to which it pertains, or with which it is most nearly connected, that the inventor, at the time the application was filed, had possession of the invention. Applicant does not agree that claims 1 and 8-22 are not in compliance with the written description requirement of 35

U.S.C. 112, first paragraph. Nevertheless, to expedite prosecution of the application, Applicant has canceled claims 1-22 without prejudice, rendering the rejection moot. Applicant therefore respectfully requests that the rejection of claims 1 and 8-22 under 35 U.S.C. 112, first paragraph be withdrawn.

Rejections under 35 U.S.C. §103(a)

Cormack et al.

The Examiner has rejected claims 1-14 as unpatentable over Cormack et al. (U.S. Patent 5,804,387) under 35 U.S.C. §103(a). Applicant has canceled claims 1-14 without prejudice, thus rendering the rejection moot.

New independent claim 23 (from which new claims 24-33 depend) recites a mutant GFP in which the amino acid residue at position 64 is cysteine. Applicant contends that cysteine, an amino acid that is not a conservative substitution of the amino acid (phenylalanine) that is present at position 64 of the wild-type protein, is a nonobvious alteration of the GFP protein which results in GFP mutants having unexpected properties of fluorescence more intense than the wild-type GFP (as provided in Table 3 of the application).

To establish a prima facie case of obviousness there must be some suggestion or motivation in the prior art to make the claimed invention, there must be a reasonable expectation of success, and the prior art reference must teach or suggest all of the claim limitations. MPEP 2142; In re Vaeck, 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991). Cormack ('387) does not teach or suggest a nucleic acid molecule encoding a Green Fluorescent

Protein having a mutation at amino acid position 64, in which the amino acid residue at position 64 is cysteine. Thus, each element of the claim is not present in the cited art, and the claims are nonobvious under 35 U.S.C. §103(a). Applicant therefore respectfully requests that the rejection be removed.

Cormack et al. and Zolotukhin et al.

The Examiner has rejected claims 15-22 as unpatentable over Cormack et al. (U.S. Patent 5,804,387) in view of Zolotukhin et al. (J. Virology 70: 4646-4654 (1996)) under 35 U.S.C. §103(a). Applicant has canceled claims 15-22 without prejudice, thus rendering the rejection moot.

New independent claim 34 (from which new claims 35-44 depend) recites a humanized nucleic acid molecule encoding a mutant GFP in which the amino acid residue at position 64 is cysteine. To establish a prima facie case of obviousness there must be some suggestion or motivation in the prior art to make the claimed invention, there must be a reasonable expectation of success, and the prior art reference must teach or suggest all of the claim limitations. MPEP 2142; In re Vaeck, 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991). Cormack ('387) and Zolotukhin et al. do not, alone or in combination, teach or suggest cysteine at amino acid position 64 of a Green Fluorescent Protein mutant, or a nucleic acid encoding a F64C mutant of GFP. Thus, each element of the claim is not present in the cited art, and the claims are patentable under 35 U.S.C. §103(a). Applicant therefore respectfully requests that the rejection be removed.

Conclusion

All of the stated grounds of objection and rejection have been addressed. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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